

CLAIMS

What is claimed is:

1. An indoor air quality module comprising:
 - an outer compartment attachable to a component, and the outer compartment includes a switch;
 - an inner compartment having an inlet, an outlet, an ultraviolet light source, and a filtering device located between the inlet and the outlet; and
 - a controller for the ultraviolet light source, and the controller activates the ultraviolet light source when the switch detects the filtering device.
2. The module as recited in claim 1 wherein the filter device is a monolith, and a photocatalytic coating is applied on the monolith, and the ultraviolet light source activates the photocatalytic coating
3. The module as recited in claim 2 wherein the monolith defines a first monolith, a second monolith, and the ultraviolet light source is located between the first monolith and the second monolith, and the switch comprises a first switch and a second switch, and the controller activates the ultraviolet light source when the first switch detects the first monolith and the second switch detects the second monolith.
4. The module as recited in claim 1 wherein the filter device is a particle filter, and the controller activates the ultraviolet light source when the switch detects the particle filter.
5. The module as recited in claim 1 wherein the inner compartment includes a first end and an opposing second end, and the first end is pivotally attached to the outer compartment and pivotal between a first position and a second position.
6. The module as recited in claim 5 wherein the switch is proximate to the first end of the inner compartment.

7. The module as recited in claim 6 wherein the filter device disengages from the switch when the inner compartment is in the second position, and the controller deactivates the ultraviolet light source.
8. The module as recited in claim 7 wherein the inner compartment is substantially parallel to the outer compartment in the first position and the inner compartment is substantially perpendicular to the outer compartment in the second position.
9. The module as recited in claim 1 wherein the switch does not engage the filter device when the filter device is incorrectly installed.
10. The module as recited in claim 1 wherein the photocatalytic coating is titanium dioxide.
11. The module as recited in claim 1 wherein the monolith is a honeycomb having a plurality of hexagonal shaped passages.

12. An indoor air quality module comprising:

an outer compartment attachable to a component, and the outer compartment includes a first monolith switch, a second monolith switch, and a filter switch;

an inner compartment having an inlet, an outlet, a first monolith located between the inlet and the outlet having a photocatalytic coating, a second monolith located between the inlet and the outlet having the photocatalytic coating, a particle filter, and an ultraviolet light source located between the first monolith and the second monolith to activate the photocatalytic coating; and

a controller for the ultraviolet light source, and the controller activates the ultraviolet light source when the first monolith detects the first monolith, the second monolith switch detects the second monolith and filter switch detects the particle filter.

13. The module as recited in claim 12 wherein the inner compartment includes a first end and an opposing second end, and the first end of the inner compartment is pivotally attached to the outer compartment and is pivotal between a first position and a second position.

14. The module as recited in claim 13 wherein the first monolith switch disengages from the first monolith, the second monolith switch disengages from the second monolith and the filter switch disengages from the particle filter when the inner compartment is in the second position, and the controller deactivates the ultraviolet light source.

15. A method of purifying air comprising the steps of:
 - flowing air through a filtering device;
 - sensing the filtering device;
 - illuminating an ultraviolet light source if the step of sensing detects the filtering device; and
 - deactivating the ultraviolet light source if the step of sensing does not detect the filtering device.
16. The method as recited in claim 15 wherein the filtering device is a monolith having a titanium dioxide coating, and the step of illuminating activates the titanium dioxide coating.
17. The method as recited in claim 15 wherein the filtering device is a particle filter.